

HUNTERS POINT SHIPYARD
RESTORATION ADVISORY BOARD (RAB) - MEETING AGENDA
THURSDAY, OCTOBER 27, 2005

Day/Date:
Thursday – October 27, 2005

Location: Alex L. Pitcher Jr. Room

Time:
6:00 p.m. to 8:00 p.m.

Southeast Community Facility
1800 Oakdale Avenue
San Francisco, CA 94124

Facilitator: Marsha Pendergrass

Time	Topic	Leader
6:00 p.m. – 6:05 p.m.	Welcome/Introductions/Agenda Review	Marsha Pendergrass <i>Facilitator</i>
6:05 p.m. – 6:20 p.m.	Approval of the September 22, 2005 RAB meeting minutes. <ul style="list-style-type: none">Action Items Review	Marsha Pendergrass
6:20 p.m. – 6:30 p.m.	Navy Announcements	Jose Payne <i>Navy Remedial Project Manager</i>
	Community Co-chair Report/Other Announcements	Barbara Bushnell <i>Community Co-chair</i>
6:30 p.m. – 7:15 p.m.	Radiological Program Update Presentation	Laurie Lowman <i>Navy Radiological Affairs Service Office</i>
7:15 p.m. – 7:25 p.m.	BREAK	
7:25 p.m. – 7:40 p.m.	Radiological Program Update Presentation Question and Answers	Laurie Lowman
7:40 p.m. – 7:50 p.m.	Subcommittee Reports <ul style="list-style-type: none">Approval of the Revised Bylaws	Subcommittee Leaders
7:50 p.m. – 8:00 p.m.	Community Based Vision of Cleanup and Reuse of the Parcel E Waterfront Presentation	Professor Jack Lendvay, <i>Chair of the Environmental Sciences Department at the University of San Francisco</i>
8:00 p.m. – 8:10 p.m.	Community Comment Period	Marsha Pendergrass
8:10p.m.	Adjournment	Marsha Pendergrass

HPS web site: <http://www.navybracpmo.org/bracbases/california/hps/default.aspx>

RAB Navy Contact: Mr. Patrick Brooks (619) 532-0930 or (619) 743-8352
george.brooks@navy.mil

RAB Community Contact: Barbara Bushnell (415) 285-1313
Bbush58@yahoo.com



Basic Radiation Concepts

RAB Meeting
October 27, 2005

Presentation Objectives



- Review basic radiation concepts
- Types of Ionizing Radiation
 - Alpha Particles
 - Beta Particles
 - Gamma Rays
 - X-rays
- Measurement of Radioactivity
- Common Sources of Radioactivity
- Risk Perspective

Basic Radiation Concepts (Cont.)



- Radiation is energy in the form of electromagnetic waves or particles from atoms
- Radiation is emitted from atoms or devices that generate electromagnetic waves
- Two types of radiation
 - Ionizing
 - Non-ionizing

Basic Radiation Concepts (Cont.)



- Radiation with enough energy to remove electrons from atoms is ionizing radiation
- Radiation that does not have enough energy to remove electrons from atoms is non-ionizing radiation
 - Examples of non-ionizing radiation are visible light, infrared light, microwaves and radio waves



- Radiological investigations at Hunters Point focus on ionizing radiation

Basic Radiation Concepts (Cont.)



• Ionizing Radiation

– Alpha Radiation

- Because of size and heavy electrical charge, can only travel a few centimeters in air
- Can be stopped or shielded by a piece of paper
- Cannot penetrate the outer layer of skin but can cause damage if ingested or inhaled

– Beta Radiation

- Moderate energy particles that can travel as far as 10 feet through air
- Can be stopped by a 1/3-inch thick piece of plastic
- Can penetrate the outer layer of skin

Basic Radiation Concepts (Cont.)



• Ionizing Radiation (Cont.)

– Gamma Radiation

- Electromagnetic radiation with no mass or charge that come from the nucleus of the atom and can travel several hundred feet
- Can penetrate most materials and require dense materials such as lead or concrete as shielding
- Can penetrate skin and interact with structures of the body

– X-Ray Radiation

- Electromagnetic radiation with no mass or charge that originate in the electron region of the atom
- Can penetrate most materials and require dense materials such as lead or concrete as shielding
- Can penetrate skin and interact with structures of the body
- Typically produced by machines

Basic Radiation Concepts (Cont.)



•Radionuclides

- Specific elements that emit alpha, beta or gamma ionizing radiation
- Radionuclides are detected in the field by using instruments that can measure their energy type (alpha, beta, gamma)
- Radionuclides are measured in the laboratory by identifying the type and amount of energy they produce

•Daughter Products

- Energy produced by a radionuclide that is a signature of another radionuclide
- These may also be called decay products

Basic Radiation Concepts (Cont.)



•Radioactivity Measurement

- Measurement units are normally reported in scientific notation or power of 10 notation
 - This allows minimal expression of large numbers
 - For example 3,456,000 would be 3.456E+6 or 3.456×10^6

•Half-Lives

- Time it takes a radionuclide to lose half of its energy
- Important when considering the effects of radioactivity
- Half-lives may be seconds, hours or thousands of years
- Examples:
 - Radium-226 1,600 years
 - Cesium-137 30.17 years
 - Lanthanum-140 40.3 hours

Basic Radiation Concepts (Cont.)



• Radiation Units

– Curie (Ci)

- Measurement of radioactivity in disintegrations per unit of time

– Roentgen (R)

- Measurement of radiation exposure

– Rad (Radiation Absorbed Dose)

- Measurement of the amount of energy absorbed by a material

– Rem (Roentgen Equivalent Man)

- Measurement used to derive the absorbed dose in biological tissue to the biological effect

• All units are expressed in metrical units

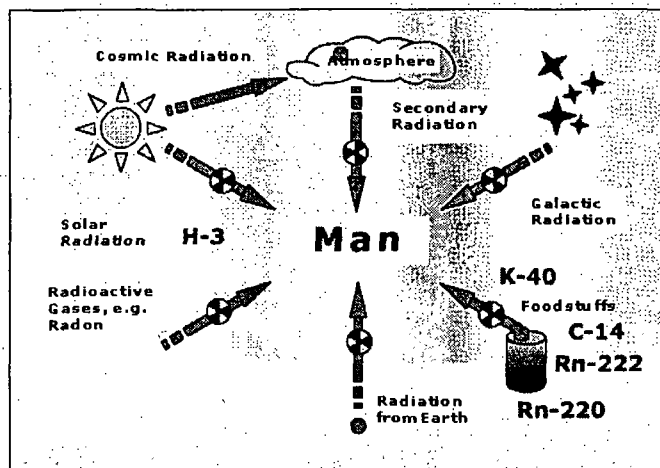
- Millicurie (mCi), micro-roentgen (uR), millirem (mrem), etc.

Basic Radiation Concepts



Natural Sources of Radioactivity

- Cosmic Radiation
- Terrestrial Radiation
- Internal Radiation
- Radon

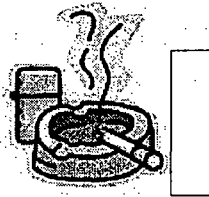
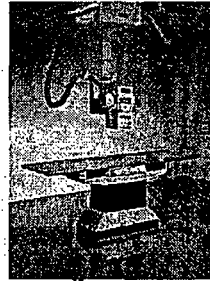


Basic Radiation Concepts



Man-Made Sources of Radioactivity

- Tobacco products $\approx 1,300$ mrem/year
- Medical radiation ≈ 54 mrem/year
- Building supplies ≈ 7 mrem/year
- Domestic water supply ≈ 5 mrem/year
- Other contributors < 1 mrem/year



Basic Radiation Concepts



Perspective of Risk - Estimated Loss of Life Expectancy

Health Risks

Smoke 20 cigarettes/day	6 years
15% overweight	2 years
Consuming alcohol	1 year
All Accidents	1 year
Motor vehicle	207 day
Home	74 days
Drowning	24 days
Natural hazards	7 days
Medical radiation	6 days
300 mrem/y for 47 y	15 days
1 rem/y for 47 y	51 days

Industrial Accidents

All industries	60 days
Agriculture	320 days
Construction	227 days
Mining	167 days
Transportation	160 days
Government	60 days
Manufacturing	40 days
Trade	27 days
Services	27 days



Questions?



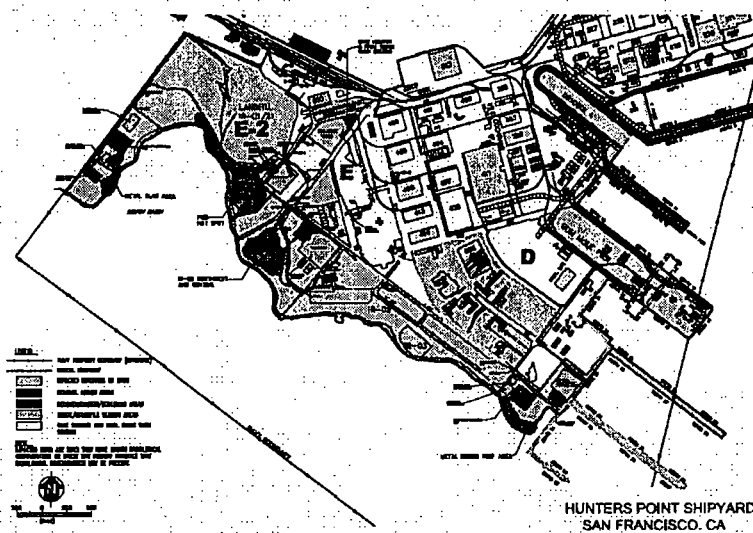
Radiological Program Update Hunters Point Shipyard

RAB Meeting
October 27, 2005

Presentation Objectives



- **Provide a status update for the TCRA sites:**
 - Metal Debris Reef
 - Metal Slag Area
 - IR-02
 - PCB Hot Spot
- **Provide a status update for recent radiological survey activities**
- **Review upcoming radiological activities:**
 - Building and site surveys
 - Coordination with other work
 - Complete updated Radiological Action Memo
 - Sanitary sewer and storm drain removal

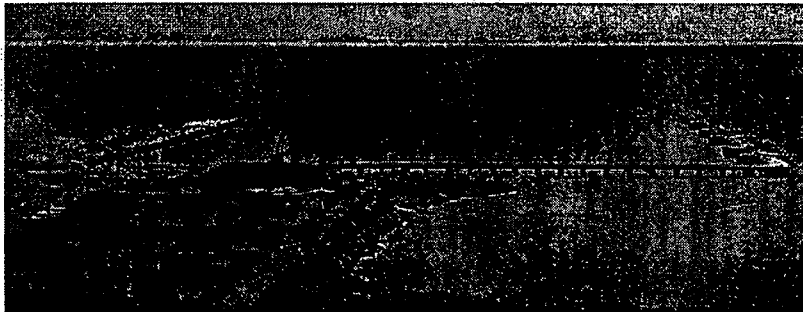


Metal Debris Reef (cont.)



What Have We Accomplished?

- Excavation completed week of 19 September
 - 11,200 cubic yards of material removed
 - Includes 125 cubic yards of general debris
 - Approximately 1/3 more than original estimate of 8500 cubic yards
- 6400 cubic yards radiologically-screened to date



Metal Debris Reef (cont.)



What Radiological Materials Have We Found?

- 44 full bins of radiological soil/sediment
 - Approximately 528 cubic yards
- 96 radiological devices
 - Include button sources, rock-like items, devices, gauges, deck markers and miscellaneous material
- 2 cubic yards of radiological materials/debris



Metal Debris Reef (cont.)



Metal Debris Reef (cont.)



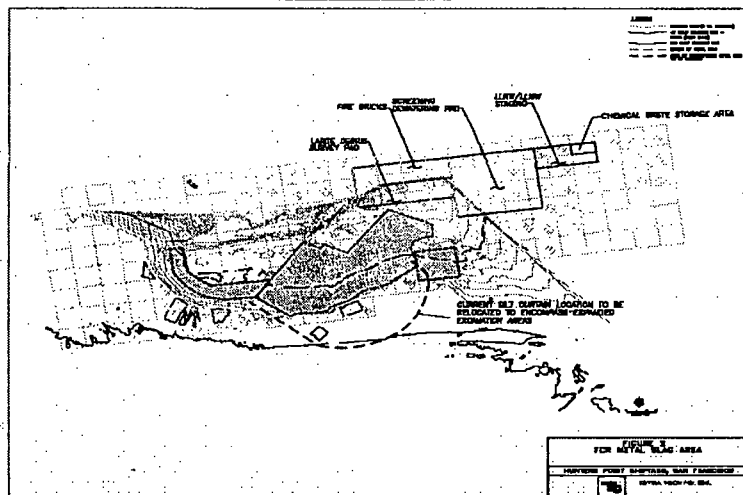
What's Next?

- Backfilling will start week of 31 October
- Radiologically cleared materials being removed
 - 3,000 cubic yards of non-rad materials have been transported to an off-site landfill
- Radioactive and mixed waste being characterized for appropriate disposal
- Additional control measures being installed to handle storm water at the site
- Additional protective measures being installed to prevent erosion of stockpiles

Metal Slag Area



Work Site Map



Metal Slag Area (Cont.)



What Have We Accomplished?

- 8200 cubic yards removed
 - Approximately 50% more than the original estimate of 5500 cubic yards
- 8000 cubic yards radiologically-screened to date



Metal Slag Area (Cont.)

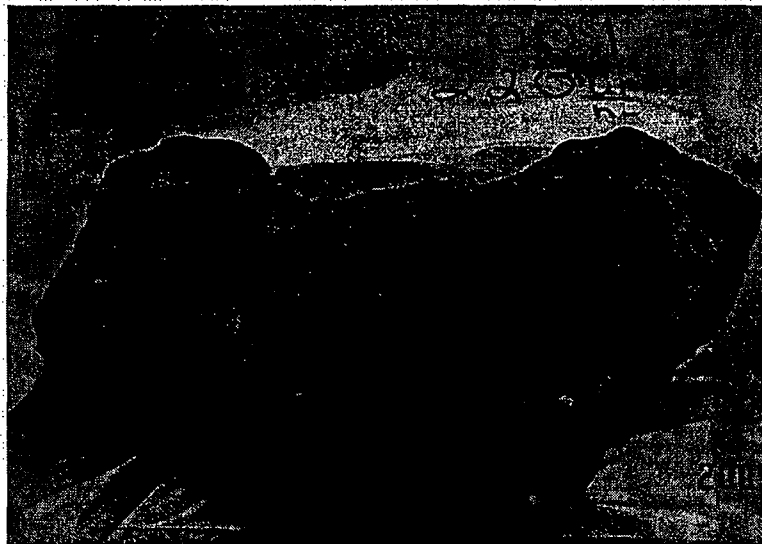


What Radiological Materials Have We Found?

- 5 full bins of radiological soil/sediment
 - Approximately 60 cubic yards
- 27 Radiological devices
 - Includes button sources, rock-like items, pieces of asphalt, clumps of dirt, pieces of slag/metal
- 12 cubic yards of debris



Metal Slag Area (Cont.)



- Silt curtain being moved to allow excavation of extended boundaries
- Excavation scheduled to be complete by late November
- Preparation of wetland area will begin after excavation is complete
- Backfilling to begin 7 November
- Radioactive and mixed waste being characterized for disposal
- Storm water erosion control measures being installed in areas without vegetative cover.

IR-02 Northwest and Central (Cont.)



What Have We Accomplished?

- Excavation currently at 3 to 4 feet below ground surface
 - Excavation will continue to 10 feet below ground surface
- 14,800 cubic yards removed to date
 - 44,100 cubic yards estimated to be excavated
- 13,500 cubic yards radiologically-screened to date



IR-02 Northwest and Central (Cont.)

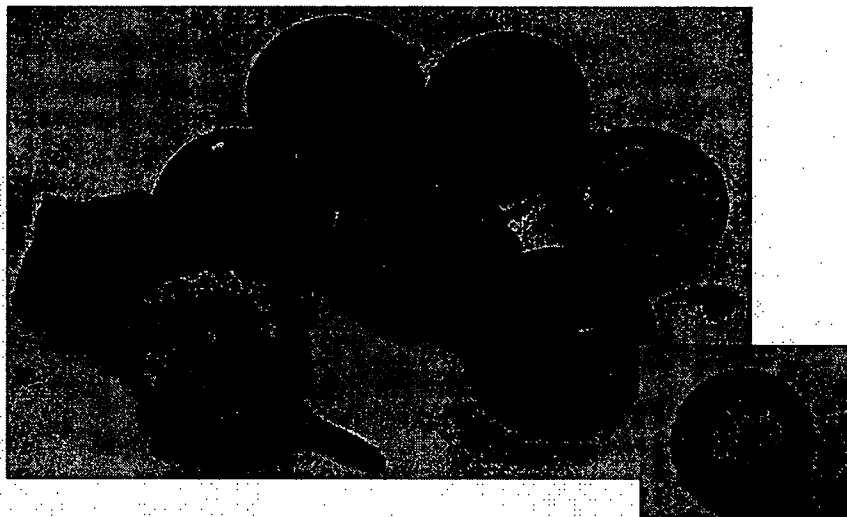


What Radiological Materials Have we Found?

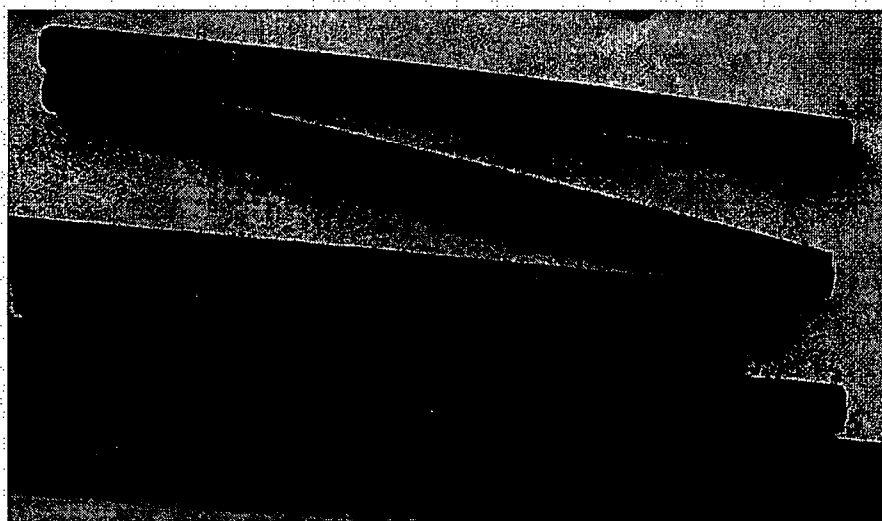
- 119 full bins of soil and sediment
 - Approximately 1487 cubic yards
- 789 radiological devices and debris
 - Button sources, dials, devices, and deck markers
- 12 cubic yards of large radiological materials/debris



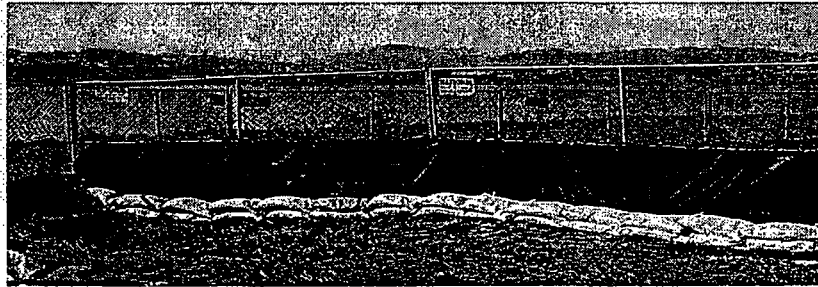
IR-02 Northwest and Central (Cont.)



IR-02 Northwest and Central (Cont.)



- Enhanced erosion control measures and additional dewatering sump and tank are being installed



PCB Hot Spot (Cont.)



What Have We Accomplished?

- Excavation currently 3-7 feet below ground surface
 - Excavation will be deeper where required
- 17,300 cubic yards removed
 - Total estimate is 31,000 cubic yards
- 22,080 cubic yards radiologically-screened to date



PCB Hot Spot (Cont.)



What Radiological Materials Have We Found?

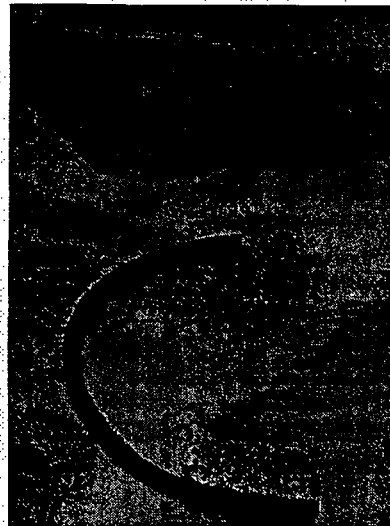
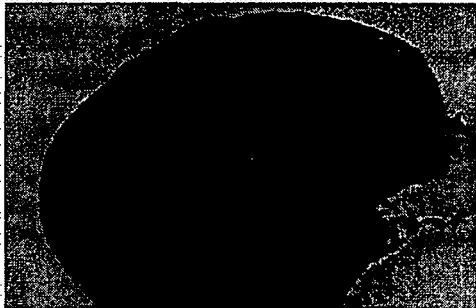
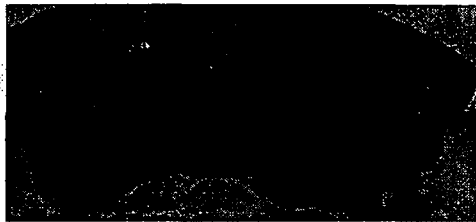
- 7 full bins of soil/sediment
 - Approximately 92 cubic yards
- 22 devices and 13 pieces of debris

What Are Non- Radiological Results?

- Approximately 12,000 cubic yards of soil with PCBs transported offsite
- Approximately 58 drums and 35 small waste containers recovered to date



PCB Hot Spot (Cont.)

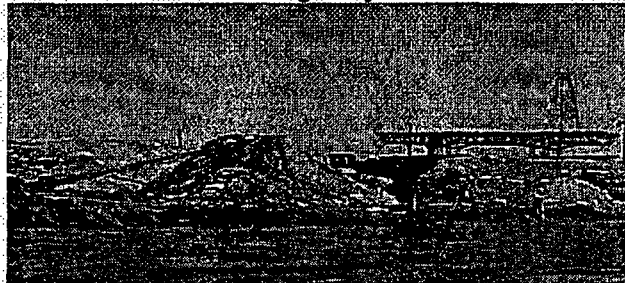


PCB Hot Spot (Cont.)



What's Next?

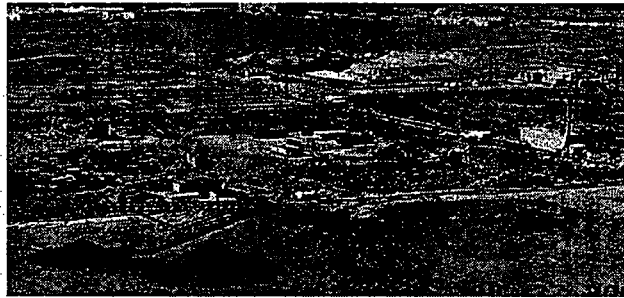
- Excavation scheduled to continue into December
- Backfill/site restoration scheduled for January 2006
- Engineering evaluation of storm water diversion methods between the landfill and PCB Hot Spot site is ongoing
- Continued removal of radiologically cleared soils and debris



TCRA Summary



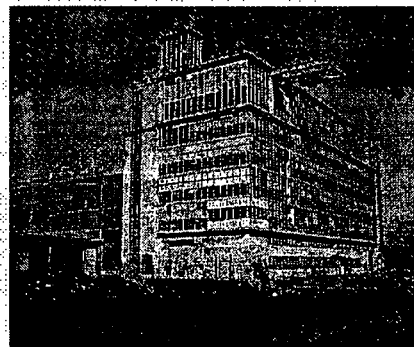
- 51,500 cubic yards of material excavated to date
 - 89,100 cubic yards originally estimated to be excavated
- 49,980 cubic yards radiologically screened to date
- 934 radiological devices found to date
- 49 cubic yards of radiological debris found to date



Recent Radiological Surveys



- Building 253
 - Former shipyard optical and ordnance shops
 - Former storage site of equipment from OPERATION CROSSROADS ships
 - Former radiation calibration laboratory
 - Probable location of radium paint shop



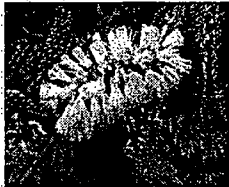
- Characterization Survey Complete
 - Contamination found on floor and wall surfaces, ventilation components, materials and equipment and in drain lines
 - Data analysis ongoing
 - Report being prepared for RASO review
 - Work plan being prepared for removal actions

Recent Radiological Survey (Cont.)



- **Base-wide Vegetation Survey**

- Samples taken of each species of vegetation from known areas of contamination
 - 707 Triangle
 - 500 Building Area
 - IR-01/21
- All samples have been analyzed
- Data evaluation underway
- Currently vegetation removed from radiologically-impacted areas is being stockpiled pending review of analyses



Recent Radiological Survey (Cont.)



- **Building 114 Site**

- Former location of NRDL Building
- Scoping survey performed
- Preliminary results show no contamination
- Data evaluation underway
- Report being prepared for RASO review

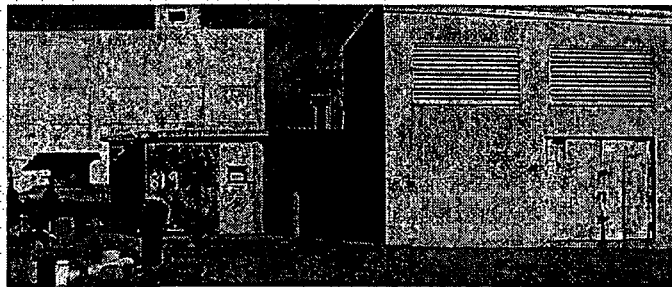


Recent Radiological Surveys (Cont.)



- **Building 819**

- Sewer pump station
- Scoping survey of building
- Disposition survey of pump system
- Preliminary results show no contamination
- Report being prepared for RASO review

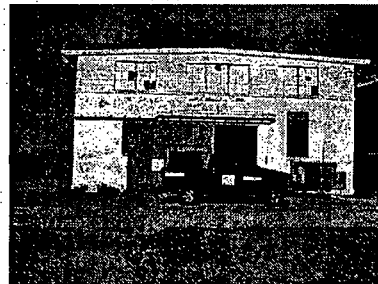


Recent Radiological Surveys (Cont.)



- **Building 146**

- Radioactive Waste Storage Area
- Radioluminescent Device Turn-in Building
- **Characterization Survey Ongoing**
 - Preliminary results indicate minimal contamination



Recent Radiological Surveys (Cont.)



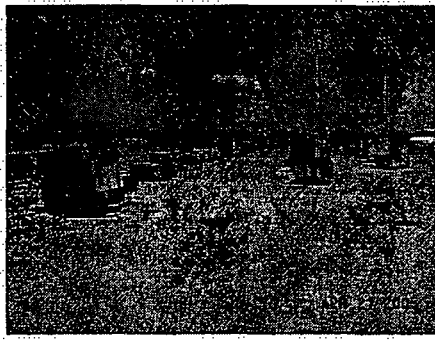
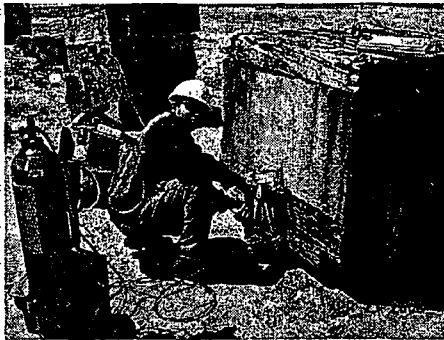
- **Keel Blocks**

- Considered radiologically impacted because of their use at radiologically-impacted dry docks

- **Being surveyed as potentially contaminated equipment**

- **Contamination found on 8 of 150 keel blocks surveyed to date**

- **Relocated to Building 406 if known to be contaminated**



Pending Radiological Surveys

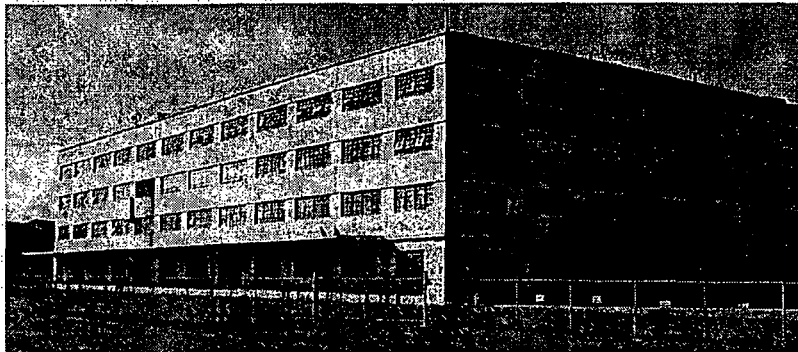


- **Building 813**

- General warehouse and offices

- Location of leaking Sr-90 source in Disaster Control Center

- TSP for Scoping Survey prepared

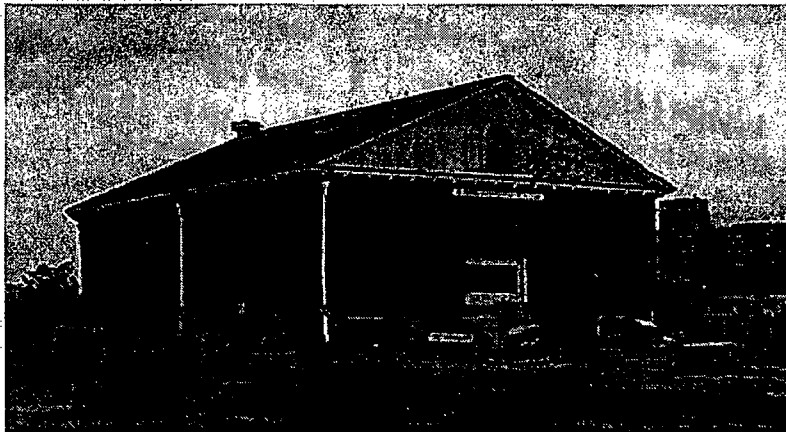


Pending Radiological Surveys (Cont.)



•Building 140 and Discharge Tunnel

–Drydock 3 Pumphouse and discharge to Bay



Pending Radiological Surveys (Cont.)



•Building 142

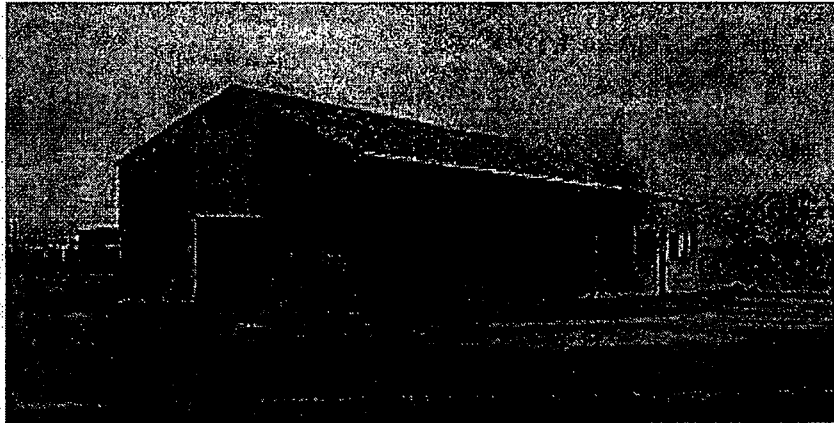
- Partially demolished concrete air raid shelter
- High-level weapons test sample storage
- Low background sample counting room
- TSP for scoping survey prepared



Pending Radiological Surveys (Cont.)



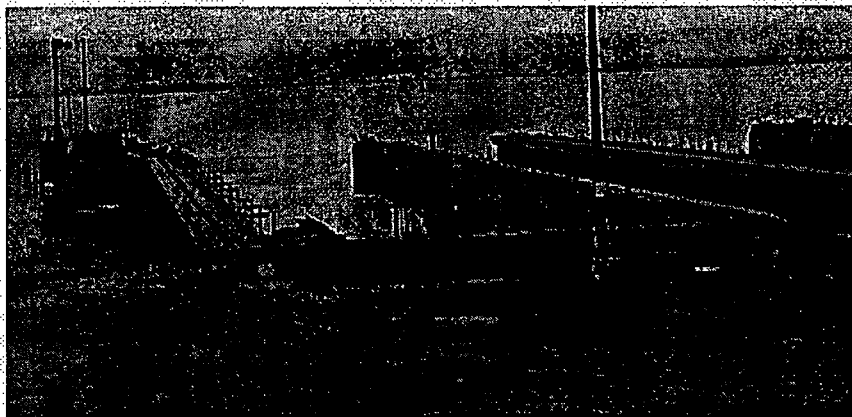
- Building 157
 - Shipyard Non-Destructive Testing (Gamma Radiography)



Pending Radiological Surveys (Cont.)



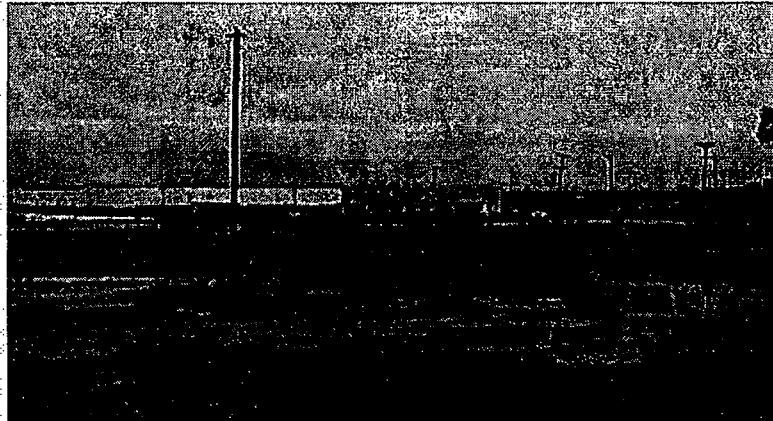
- Drydocks 5, 6, and 7
 - Decontamination of OPERATION CROSSROADS ships



Pending Radiological Surveys (Cont.)



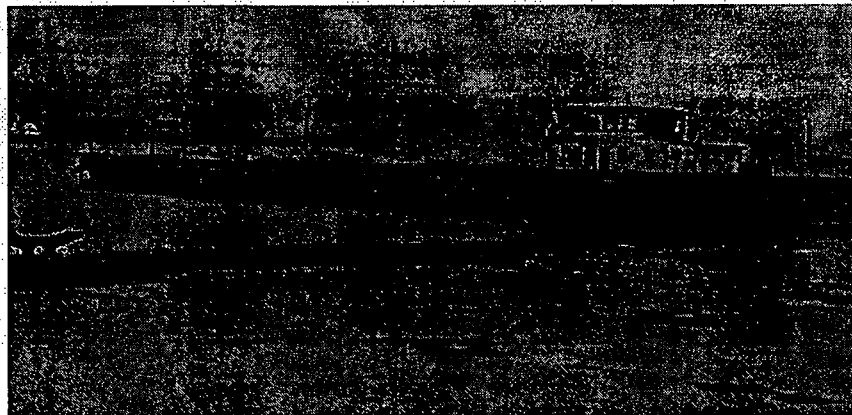
- Installation Restoration Sites IR-07 and IR-18
 - OPERATION CROSSROADS decontamination waste disposal



Pending Radiological Surveys (Cont.)



- Ships Berths and Piers
 - Berthing of OPERATION CROSSROADS ships



Upcoming Radiological Activities (Cont.)

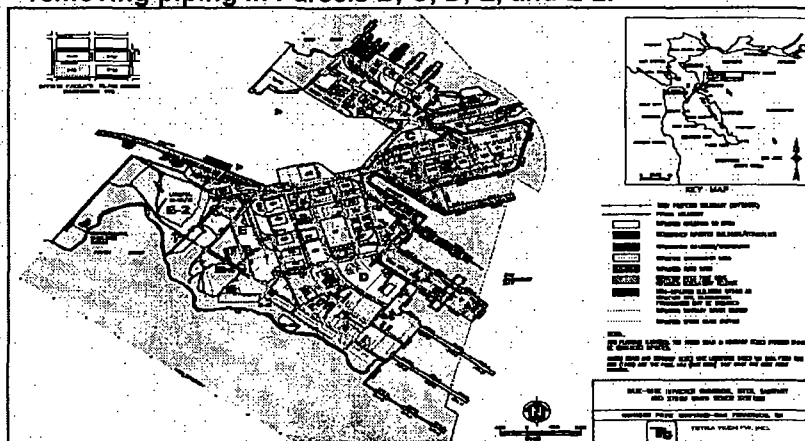


- **Lennar Storm Water Sewer Installation (Parcel B)**
 - Support installation of a storm drain line from the former Parcel A to the Bay
 - Will require removal of two lines and excavation of an area in IR-07
- **Complete Updated Radiological Action Memo**
 - Will amend current Action Memo to implement the recommendations of the HRA

Upcoming Radiological Activities (Cont.)



- **Sanitary Sewer and Storm Drain Removal**
 - Base-wide Removal Plan provides framework for removing piping in Parcels B, C, D, E, and E-2.



Upcoming Radiological Activities (Cont.)



- **Parcel-specific Design Plans** identify detailed construction approach within each parcel
 - Draft Base-wide and Parcel B design plans currently under review
- Technical approach is to remove all lines, survey and sample piping and surrounding excavated soil, and conduct sampling of exposed soil
- Lines extending laterally from the main lines will be removed to the boundary of radiologically-impacted sites or ten feet from the main line to non-radiologically impacted areas

Upcoming Radiological Activities (Cont.)



- **Sanitary Sewer and Storm Drain Removal Schedule**
 - Draft Base-wide Removal Plan to regulators November 1, 2005
 - Parcel B Design Plan to regulators November 1, 2005
 - Comments on Draft Plans due December 30, 2005
 - Draft Final Plans to regulators February 2, 2006
 - Comments on Draft Final Plans due March 1, 2006
 - Final Plans issued March 31, 2006
 - Begin Sanitary Sewer and Storm Drain Removal in Parcel B on April 1, 2006

Radioactive Waste Disposal



- Radioactive waste from radiological investigations and removals is being stored in Buildings 406 and 211, and the former Salvage Yard
- Waste is being chemically and radiologically characterized to identify disposal options



Radioactive Waste Disposal (Cont)



- Waste is being packaged in strong tight metal containers for shipment
 - 55 gallon drums
 - 20 cubic yard roll-offs
- Waste containers are sealed and locked prior to shipment
- Each shipment is coordinated by DOD certified radioactive waste broker
- Shipments began October 25, 2005



Questions?

**HPS Membership/Bylaws & Community Outreach (MBCO)
Restoration Advisory Board (RAB) Subcommittee
Meeting Minutes for October 12, 2005
6:30-8:00 p.m.
Anna Walden Library**

The MBCO RAB subcommittee meeting on October 12, 2005 was called to order by Keith Tisdell, RAB member, and subcommittee leader. The subcommittee meeting took place at the Bayview Anna Waden Library from 6:30 to 8:00 p.m.

MBCO Subcommittee attendees: RAB members- Keith Tisdell, Barbara Bushnell, James Morrison, Raymond Tompkins, and Melita Rines. EPA- Jackie Lane. SulTech - Carolyn Hunter. Young Community Developers (YCD) – Brian Baltimore. RAB Applicants- Patricia Brown (Shipyard Artist/Local Business) and Rodney Hampton (Resident “at large”)

INTERVIEW NEW RAB APPLICANTS:

Three people submitted applications to become RAB members:

- Bay Area Metals (Local Business)
- Patricia Brown (Shipyard Artist/Local Business)
- Rodney Hampton (Resident “at large”)

Bay Area Metals was not present for this interview process, and their application will be held until Bay Area Metals can be contacted to verify their intent. Ms. Hunter will send them an e-mail notifying them that the next MBCO subcommittee meeting will be in January 2006 if they are interested in attending.

Both Ms. Brown and Mr. Hampton were interviewed and it was unanimously voted that they be presented to the full RAB for consideration of membership.

ANNUAL UPDATE OF RAB BYLAWS:

Mr. Tisdell began the discussion regarding the annual update to the RAB Bylaws, starting with the proposed changes developed during the July and September 2005 MBCO Subcommittee meetings.

Ms. Hunter announced that prior to the RAB meeting on September 22, 2005, she sent out the proposed changes made at the July and September 2005 MBCO Subcommittee meeting to the full RAB for their review. Ms. Hunter reported that to date, no changes have been requested by the RAB.

The subcommittee discussed various changes and made some suggestions on language to be added or deleted in the revised RAB Bylaws.

There was a request to revise #4 (Quorum) and it was put to a vote: 6-1 against making any changes.

The subcommittee agreed that the RAB Bylaws have already been sent out for review by the board and if there were additional changes they cannot be passed until December 2005. Since the changes discussed were mostly semantic, the group decided to stay with the changes already posed in the draft that was submitted to the RAB for review in September 2005. In July 2006, the subcommittee will begin the revision process of the RAB Bylaws and will revisit the semantics discussion.

REVIEW ACTION ITEMS FROM SEPTEMBER 2005:

Mr. Morrison reported to the subcommittee that during September 2005, he began outreach in the Asian Community by providing information packets on the RAB/Navy along with an application to join the

RAB. Mr. Morrison agreed to bring an example packet to the next subcommittee meeting in January 2006.

MBCO SUBCOMITEE OCTOBER 2005 ACTION ITEMS:

- Carolyn Hunter will contact Bay Area Metals via e-mail to find out if they are still interested in joining the RAB, and if so, who their representative will be.
- Mr. Morrison will bring a sample community outreach packet to the next MBCO subcommittee meeting.

NEXT MBCO SUBCOMITEE MEETING:

January 11, 2006 from 6:30 to 8:00 p.m. at the Bayview Anna Waden Library.

Agenda

Technical Subcommittee—RAB

October 27, 2005

6:00 PM

Anna Waden Library-Third & Revere St.

Agenda topics: Groundwater Sampling Reports—Begin Parcel B

Review data from 19th Quarterly Groundwater
Sampling Report (July to Dec 2004)

8/19/2005

Discussion: Handouts

1. Overview of Purpose and Procedures
2. Abbreviations and Acronyms
3. Methods/Standard Operation Procedures
4. What was looked for/found
5. Conclusions

MINUTES

We reviewed the purpose, procedures and goals in tracking groundwater.

- ❖ Purpose: Characterize and track the flow of groundwater and any contaminants it contains, as groundwater tends to flow into the Bay.
- ❖ Monitor any effects on the Bay and comply with regulations/laws regarding contamination of Bay.

10/27/2005

- ❖ Review the methods and process (SOPs) used to prepare for groundwater monitoring. Keith Tisdale who has participated in this task was able to give first person reports on this. The process and measurements were of special interest.
- ❖ The data collected from this is published in these reports allow the characterization and monitoring of contaminants to further the remediation planning and progression
- ❖ Looked at and read groundwater maps

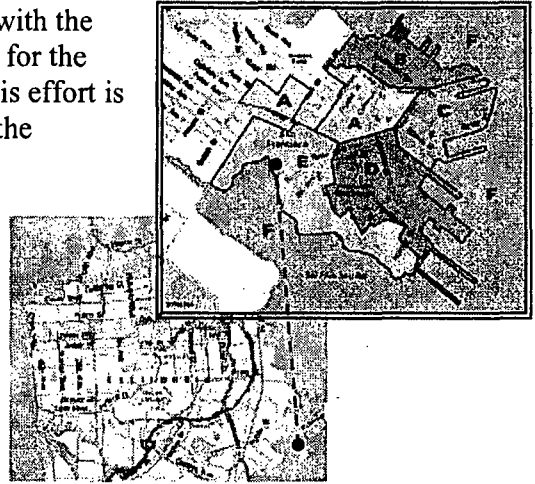
Future plans: Continue to study recent groundwater reports on Parcel B (1st Qtr dated 8/19/2005) and C, D, E (3rd Qtr dated 9/9/2005-combined reports) available in CD. Interested members could take a parcel and study that site or any specific contaminant to understand and explain back to committee. The Navy will be available to advise us as needed and the regulators are always helpful. There are three copies of hand outs from this meeting—contact Carolyn Hunter if interested; they can familiarize you with Abbreviations and Acronyms to assist understanding the documents. We will try to schedule one more meeting in November and choose our projects. Date announced at RAB meeting.

CONCEPTUAL PLAN for the HUNTERS POINT PARCEL E WATERFRONT PARK

The State Coastal Conservancy has funded Arc Ecology to work with the Bayview-Hunters Point community to develop a Conceptual Plan for the Parcel E Park that the Shipyard Redevelopment Plan includes. This effort is supported by a cooperative agreement between Arc Ecology and the Redevelopment Agency.

The Conceptual Plan will integrate:

- ❖ priorities of the Bayview-Hunters Point community;
- ❖ environmental opportunities and challenges presented by this Super Fund site;
- ❖ economic opportunities generated by park development;
- ❖ redevelopment plans for other areas of the Shipyard, especially Parcel A that is being developed primarily as housing;
- ❖ Shipyard commercial transportation access plans that are being formulated by the San Francisco Department of Public Works;
- ❖ nearby parks and trails, both existing and currently being planned by the City of San Francisco and the State of California.



Four Variations of the Plan

The Conceptual Plan will explore four variations that cover two transportation alternatives and two cleanup alternatives. The transportation alternatives illustrate two of the routes the City is considering for commercial traffic access to the Shipyard. One of the cleanup alternatives will assume that the contaminated industrial landfill will remain beneath a clay/soil cap. The other cleanup alternative will assume that the contaminated landfill on Parcel E will be excavated and replaced with a wetland to treat runoff and provide wildlife habitat.

Parcel E: From Toxic Site to Shoreline Park

Parcel E covers extends over more than 100 acres, most of which were developed from extensive cut and fill operations performed by the U.S. Navy from 1940 to 1945. It includes approximately 8,000 linear feet of shoreline. Plans in preparation by the City and Shipyard developer Lennar Homes anticipate demolition of various small buildings and of Navy Bachelor Officer Quarters. A number of buildings found along the northern edge of Parcel E are expected to remain.

The contamination of Parcel E has generated a great deal of community concern about health hazards. It was used by the Navy primarily as a disposal site, and is now considered the most contaminated of the dry land parcels in the Shipyard. This year the Navy is planning to remove a radium dial disposal area, and oil sump ponds. The industrial landfill (also known as Parcel E2) encompasses the largest disposal area and is the site identified for a possible storm water treatment wetland.

Although the Navy is ultimately responsible for cleaning up the site consistent with its future use as open space, the Conveyance Agreement that the City negotiated with the Navy has created a role for the City and the community to influence remediation decisions. A ballot initiative approved by 87% of San Francisco voters calls for the Shipyard to be cleaned up to the "highest practicable standard." To achieve the standard, this project will closely review and comment on the Navy's cleanup plans as they are being developed. Detailed information about the cleanup will be integrated into variations of the Conceptual Plan.

The Greening of Hunters Point

Planning for the Parcel E Shoreline Park is being coordinated with other revitalization efforts that are currently under way:

- ❖ restoration of Yosemite Slough at Candlestick Point State Recreation Area,
- ❖ the first phase of Shipyard redevelopment by Lennar Homes
- ❖ the comprehensive plan for open space being formulated by the Project Area Committee
- ❖ the Bay Trail that will eventually encircle San Francisco Bay.

The Parcel E Shoreline Park is needed to complete a chain of open spaces planned for the waterfront. It is also needed to protect recreational and wildlife uses from contamination by Parcel E's active sources of PCBs. PCBs and heavy metals are already contaminating the sediments underlying the water in South Basin (the southern portion of Parcel F) and are probably accumulating in the food of sea birds in the area.

Unless contamination from Parcel E is fully addressed, the ecological integrity of Candlestick Point, the Parcel A hillside and other related open spaces could be compromised. The proposed park on Parcel E already requires the Navy to pursue a higher order investigation and remedial action plan addressing human health and ecological risk.

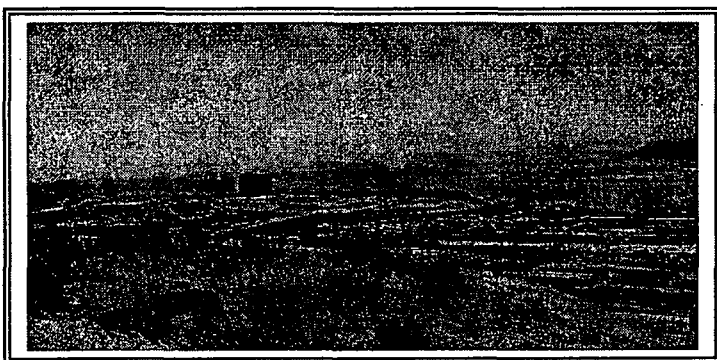
Planning for Environmental Justice

The Presidio and the Shipyard were closed within two years of one another. Both are in watersheds that feed a complex system of creeks, wetlands, and beaches. The Presidio is now a national park where more than \$40 million was spent rehabilitating the toxic landfill on its northern shoreline to create the world class Crissy Field Wetland, beach and promenade.

Remediation of Shipyard toxic sites and development of a shoreline park are in the beginning stages. A major purpose of our park planning project is to ensure that the same high remediation and park development standards shaping Crissy Field will apply to the Shipyard's Parcel E.

Leveraging Business and Jobs Opportunities

In addition to recreation and the enjoyment of nature to Bayview-Hunters Point, the Parcel E Shoreline Park will also generate new business and job opportunities. The Conceptual Plan will explore ways that these can be enhanced and targeted to the neighborhood.



For more information: Arc Ecology
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San Francisco, California 94124
(415) 643-1190
evebach@arcecolology.org

Arc Ecology is a non-profit public interest organization that helps disadvantaged communities maximize the opportunities created by the redevelopment of closed military bases. We offer technical assistance on the array of issues that confront such communities, including toxics cleanup, military base conveyance and reuse, environmental analysis, community-based planning, and affordable housing.

Project Partners:

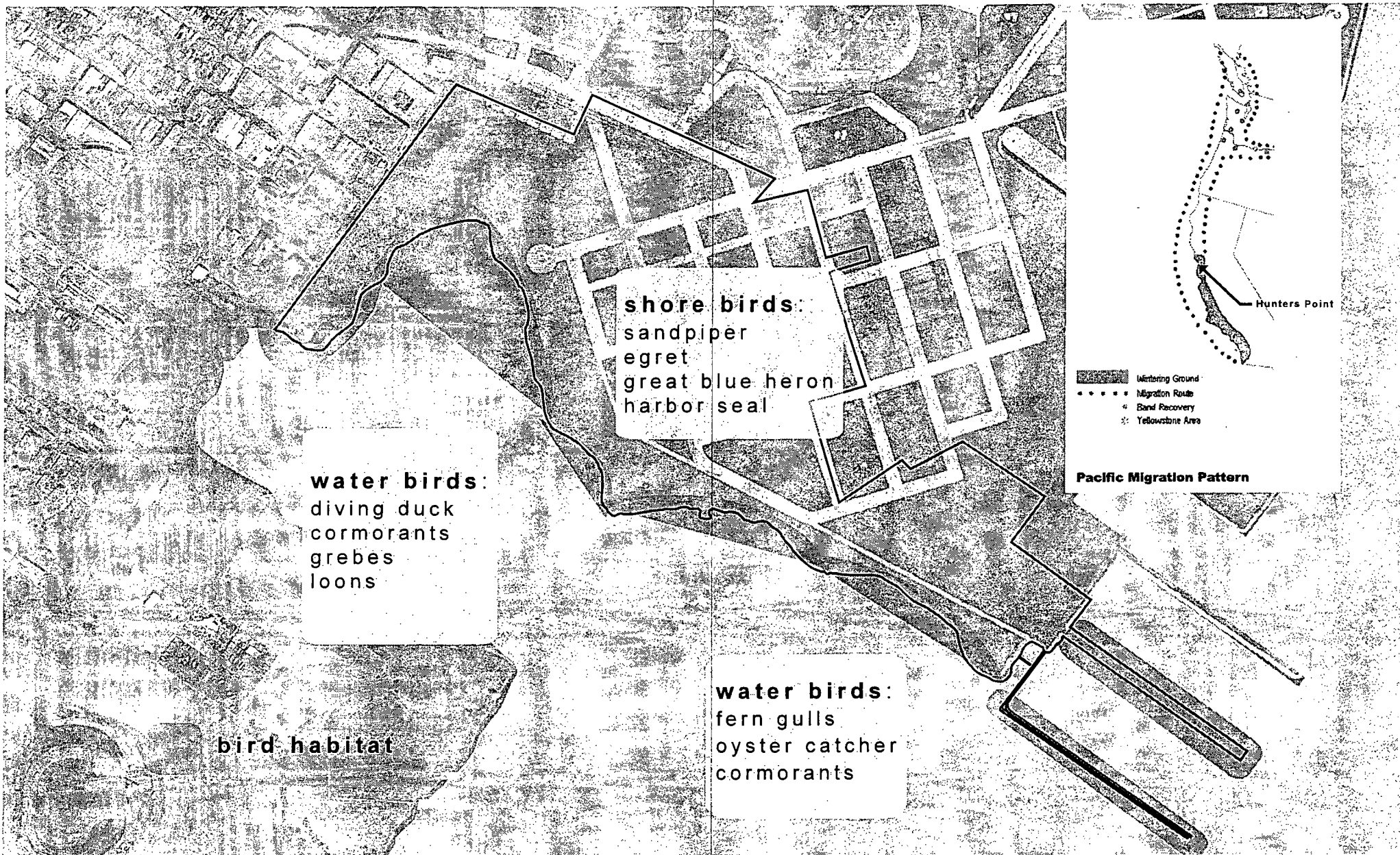
State Coastal Conservancy • Hargreaves Associates • Bayview Hunters Point Community Advocates • Literacy for Environmental Justice • USF Environmental Science Department Chair Dr. John M. Lendvay • Golden Gate Audubon Society • Brown & Caldwell • CSU-SJ Environmental Engineering Professor Dr. Rhea Williamson • Radioactive Waste Management Associates



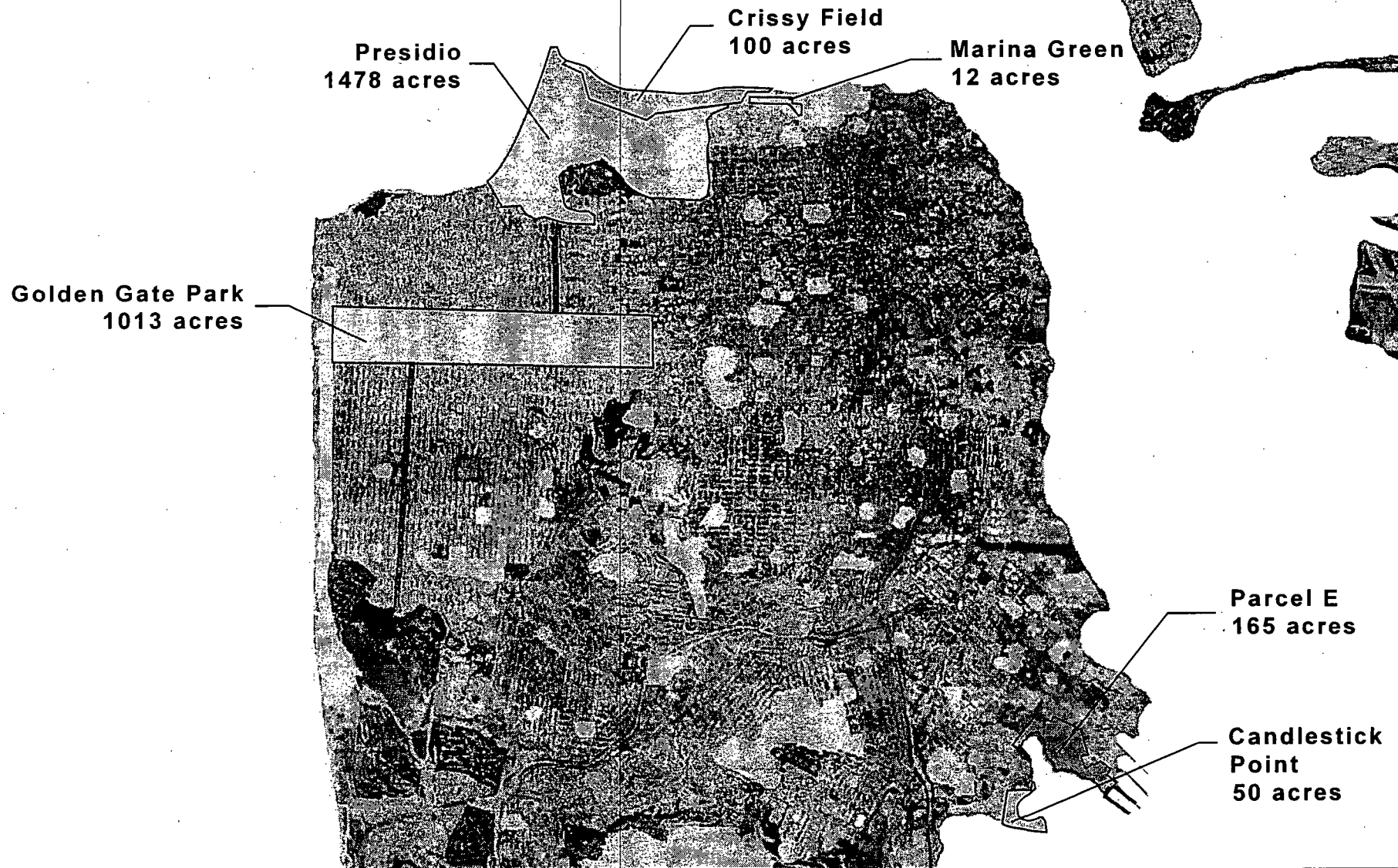
HUNTERS POINT
WATERFRONT PARK

INVENTORY

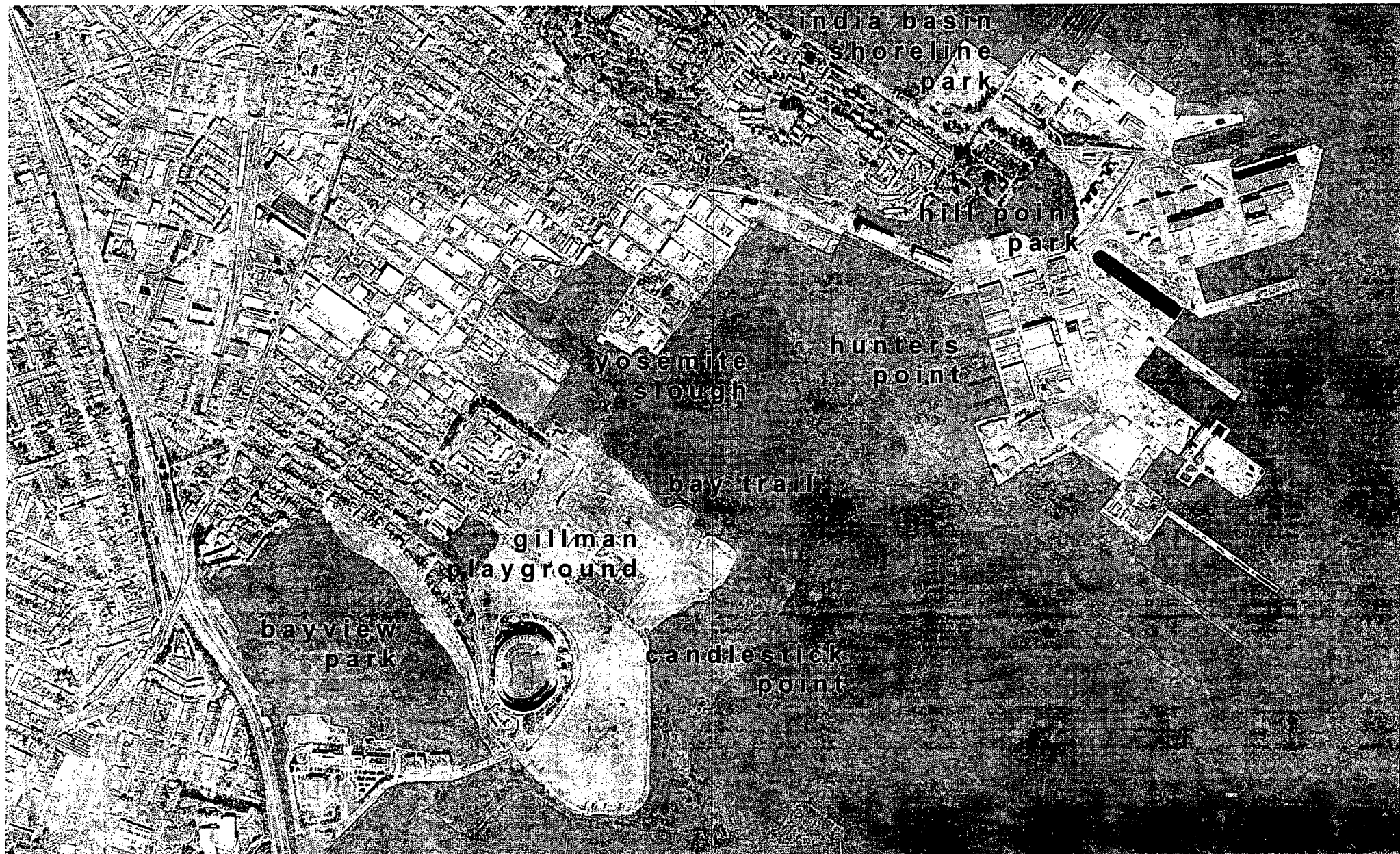
A high-contrast, black and white photograph of a landscape. The image is characterized by a stark, almost binary aesthetic, with deep blacks and bright whites. In the foreground, there's a dark, textured area that looks like a field or a body of water. In the middle ground, a body of water stretches across the frame, reflecting the light. Beyond the water, there are rolling hills or mountains. The word "INVENTORY" is superimposed in large, white, sans-serif capital letters across the middle of the image, partially obscuring the landscape. The overall effect is one of a stark, perhaps industrial or military, environment.



species **INVENTORY**



area parks **INVENTORY**



LINK TO REGIONAL PARK SYSTEM

Park-related:

tour guides
bike rentals
boat launch and rentals
grounds maintenance
afterschool programs
interpretive/ environmental center
coaches

Larger-scale park complementary uses:

museum
aquarium
recreation center
community center

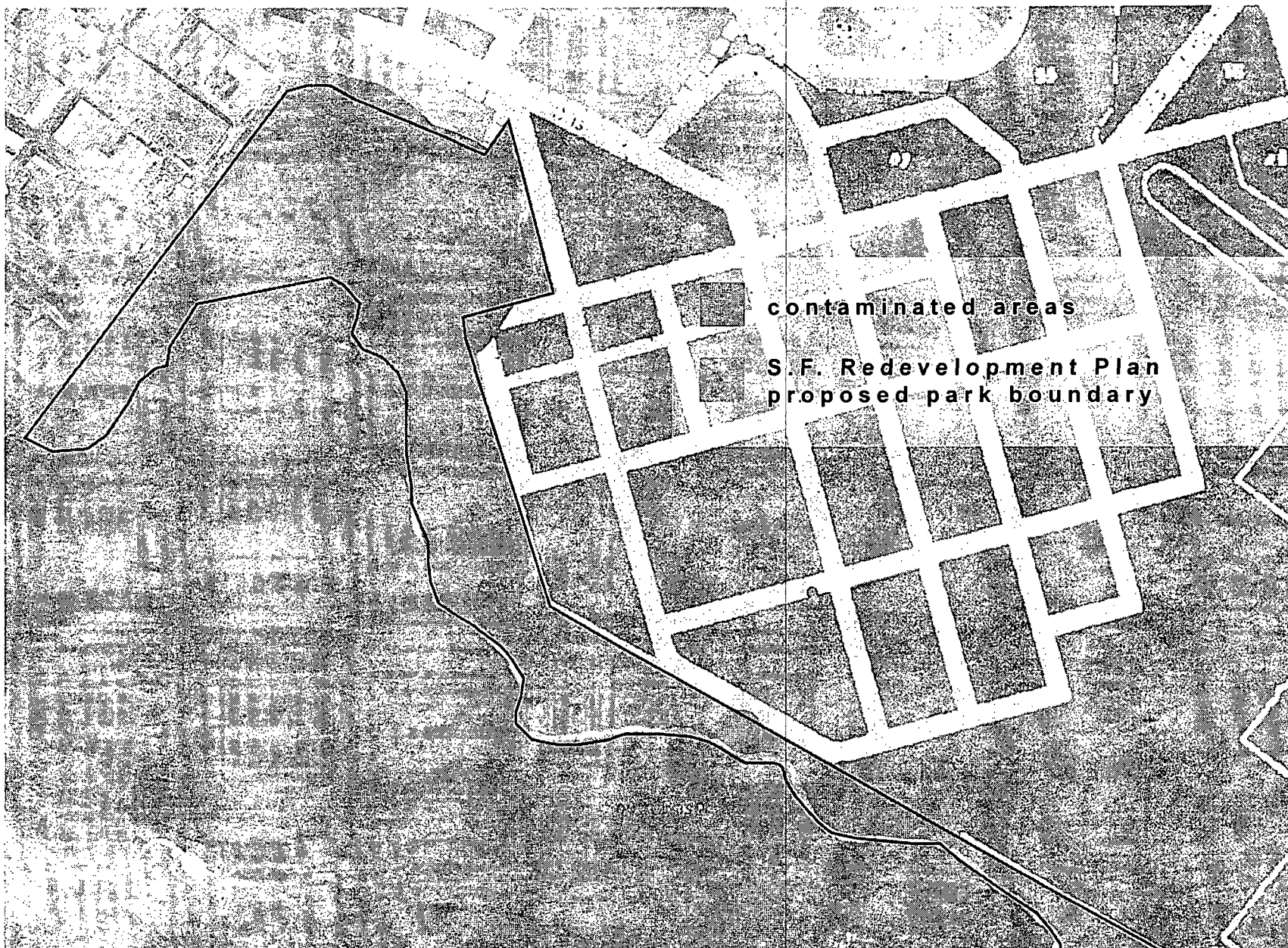
J O B S A N D B U S I N E S S



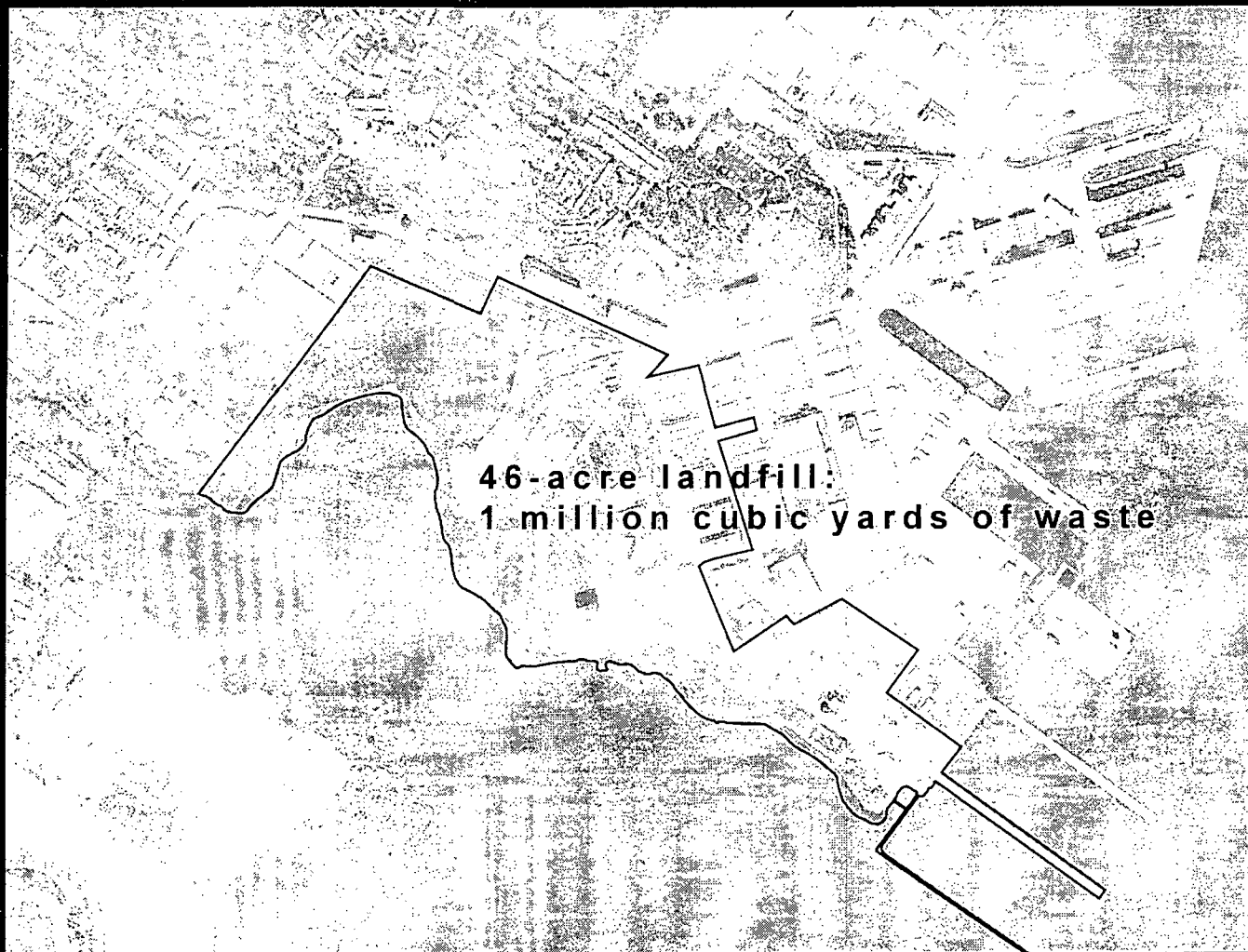
DESIGN OPPORTUNITY 2:

CLEAN UP

HOW WILL WE MAKE THE PARK SAFE AND HEALTHY?



CLEAN UP



**46-acre landfill:
1 million cubic yards of waste**

naval history:

sandblast waste
asbestos
radium-containing waste
paints, solvents
waste oil
landfill waste
construction waste
industrial waste
oily sand
asphalt

**known
contaminants:**

heavy metals
VOCs (benzene)
pesticides
PCBs
Hydrocarbons
1,4-DCB
cyanide
ammonia
iron

landfill reclamation CLEAN UP

COVER

cap toxic soil + cover with clean fill



cap comprised of: vegetative layer, drainage layer, low-permeability layer, and 2 ft thick clay layer



forms barrier between contaminants and surface

no dust

eliminates most environmental effects in the short term

short-term solution only

does not lessen toxicity, mobility, or volume of contaminants

maintenance of cap integrity limits future use

does not limit horizontal flow of groundwater

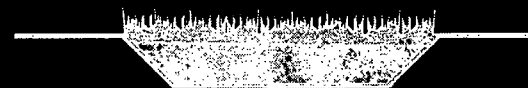
potential for cracking

potential for degradation over time



REMOVE

remove toxic soil + replace with wetland



complete removal of waste guarantees future safety of site

potential for intensive off-site treatment of waste

wetland infill less expensive than other kinds of fill

wetland habitat for wildlife

expense

site disturbance

neighborhood disturbance, noise

dust

landfill reclamation **CLEAN UP**

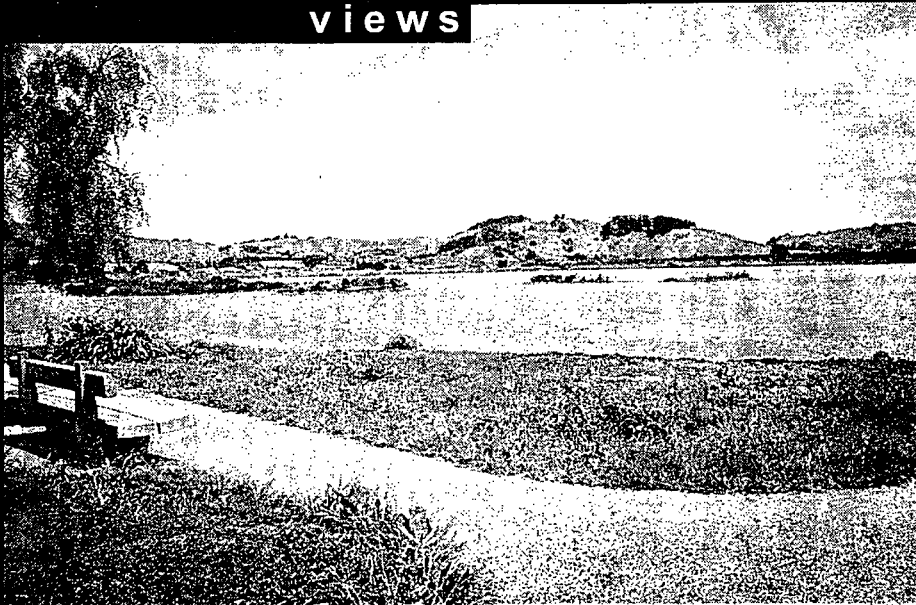


DESIGN OPPORTUNITY 4

PARK CHARACTER

WHAT IS YOUR VISION OF THE PARK?

views



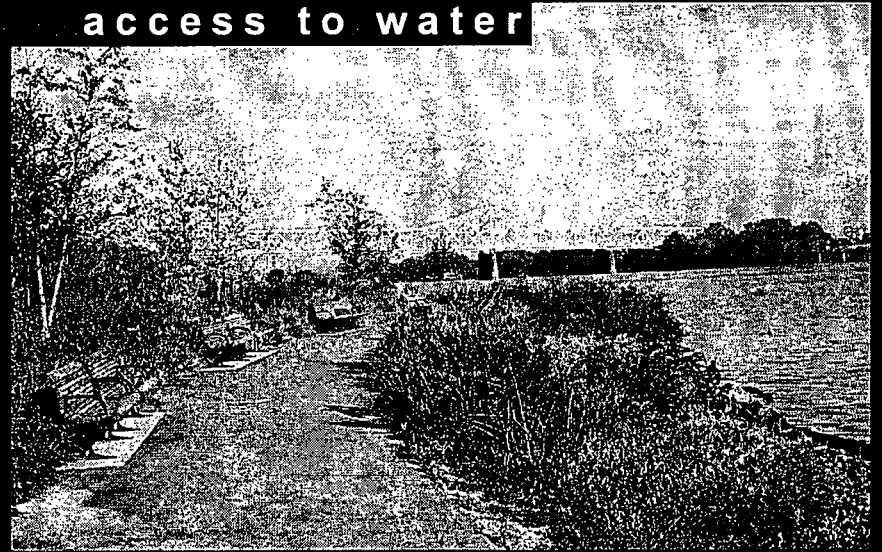
narrow habitat



shore-side trails



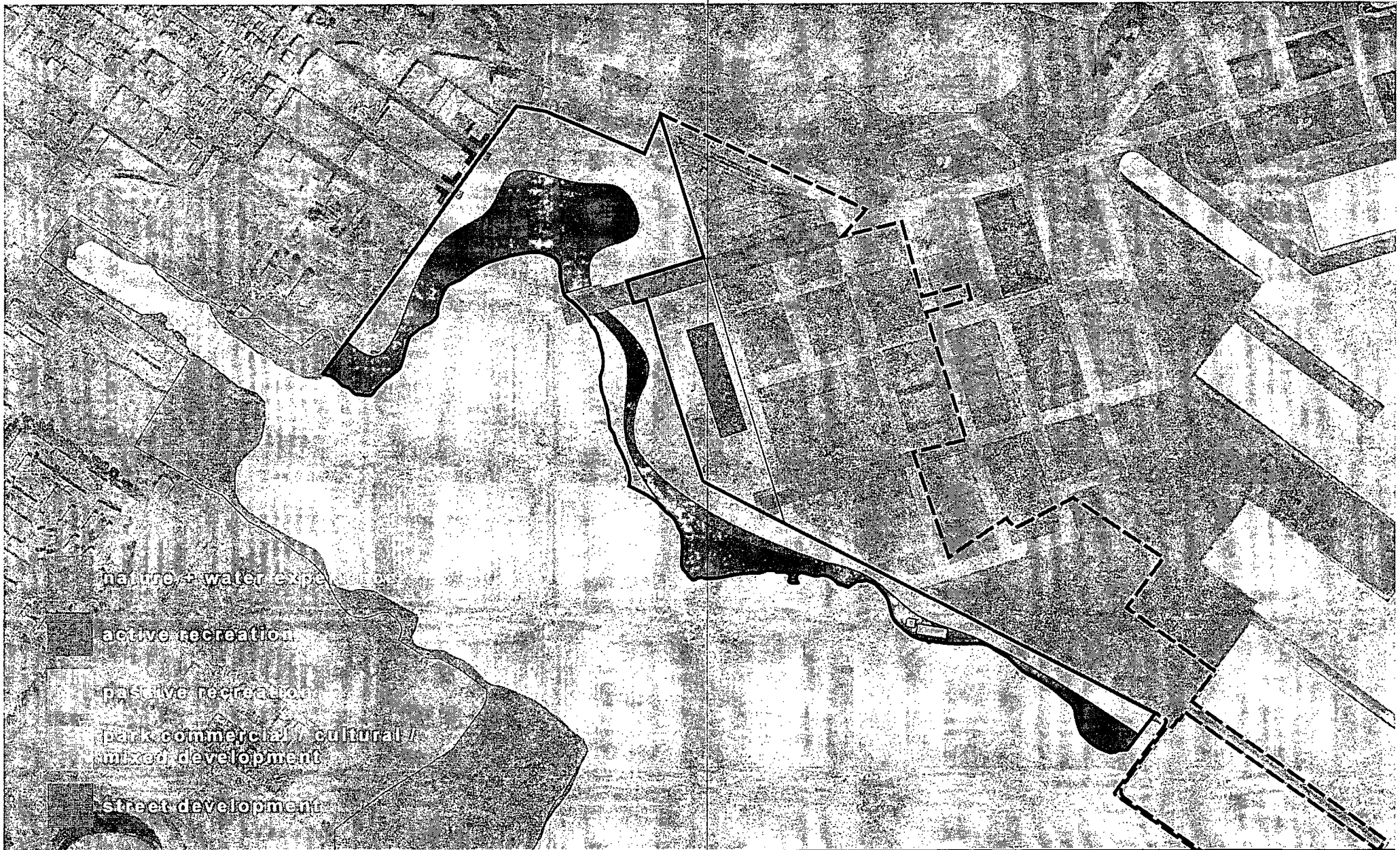
access to water



SHORE EDGE PARK



shore edge park: 60 acres **OPTIONS**



nature + water experiences

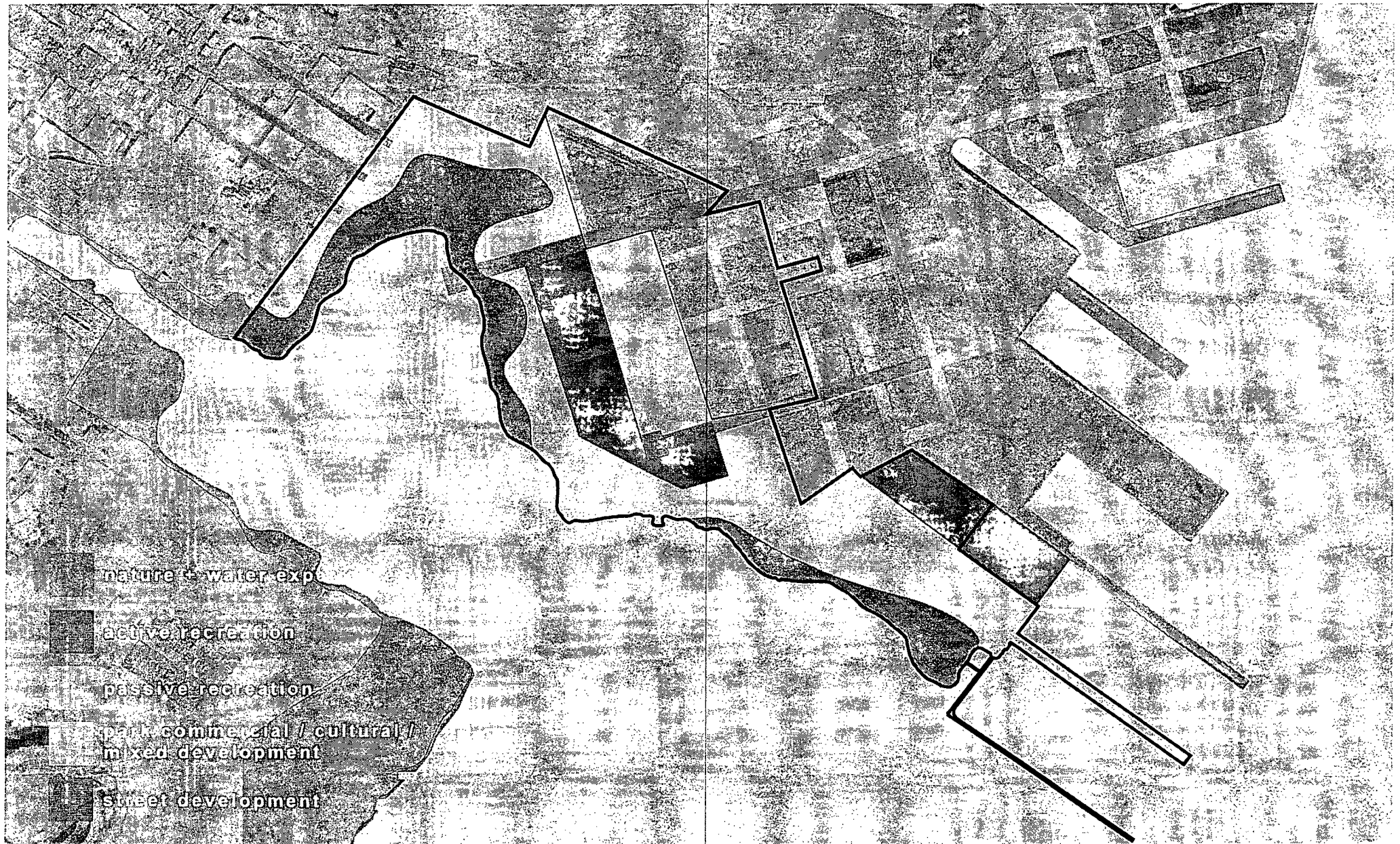
active recreation

passive recreation

park commercial / cultural /
mixed development

street development

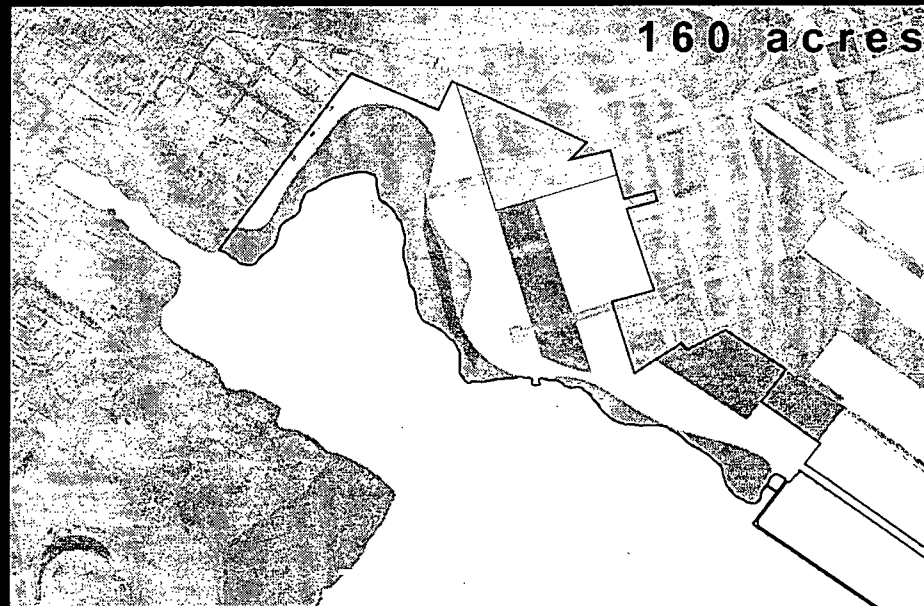
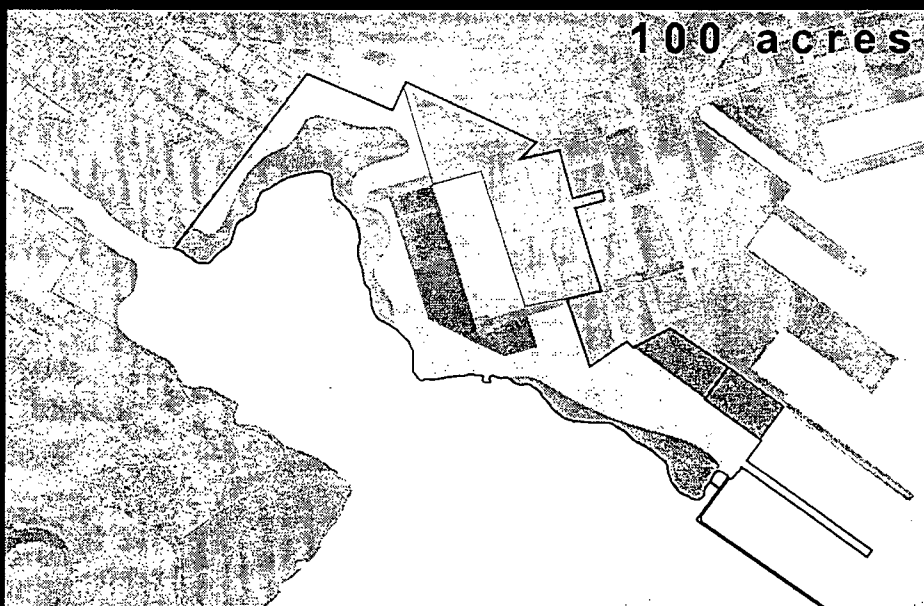
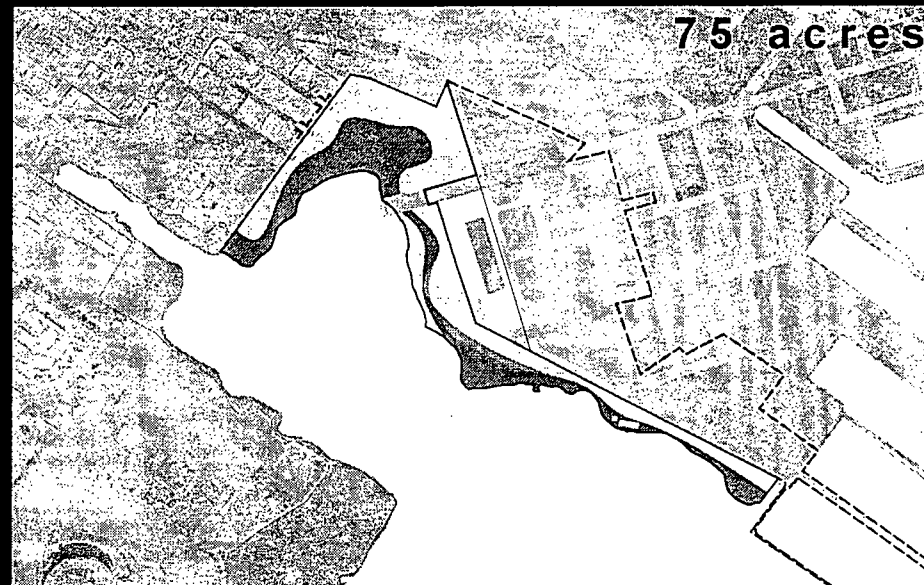
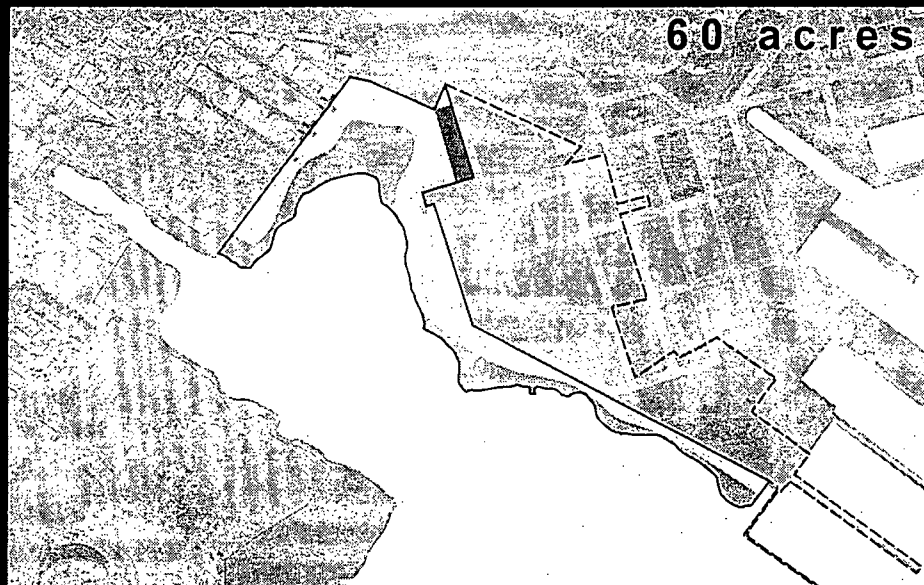
shore edge park: 75 acres **OPTIONS**

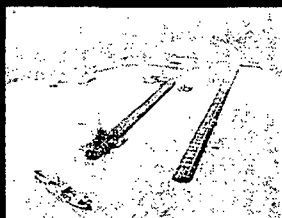


waterfront park: 100 acres **OPTIONS**



waterfront park: 160 acres **OPTIONS**





1989

NAVY CLOSES
HUNTERS POINT
SHIPYARD



1997

SHIPYARD
REDEVELOPMENT
PLAN DESIGNATES
PARK ON PARCEL E



CITY MAKES
DECISION
ABOUT
PARCEL E
WATERFRONT
PARK



CITY AND
OTHER PUBLIC
AGENCIES
APPROVE
DETAILED
PLANS FOR
PARCEL E
WATERFRONT
PARK



PUBLIC AGENCY
BUILDS PARCEL
E WATERFRONT
PARK



PARK
OPENS

TODAY

COMMUNITY PROCESS
TO DEVELOP A
CONCEPTUAL PLAN
FOR PARCEL E WATER-
FRONT PARK